Ke Xu

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Education

University of Waterloo | **Bachelor of Software Engineering** *Sept 2020 – May 2025*

Courses: Database Management / Design (SQL), Data Structures and Algorithms, OOP Programming (C++)

Technical Skills

Languages: JavaScript, C++, SQL, Python, Java, C, HTML, CSS

Tools: Node, React, Redux, MongoDB, PostgreSQL, GCP, AWS, Docker, Kubernetes, Mockito

Certificates

AWS Certified Cloud Practitioner *Apr 2022 - Apr 2025*

Experience

Enlighted | **IoT Software Developer** *Jan 2022 – Apr 2022*

- Built the statistics webpage for Enlighted's smart lighting system using **React Redux** and **Jest**, for customers to track product energy consumption graphically
- Developed a gateway simulator application in **Java** and **Python** with **Selenium** using **GCP Kubernetes Engine**, reducing setup time for scalability testing by **84%** and manual handling time to **0**
- Implemented sensor data streaming with **Apache Kafka,** and automated the process of health checking by extracting Kafka logs from the server, significantly enhancing user experience

Quali AI | **Software Developer** *May 2021 – Aug 2021*

- Built critical features for AIXEL's web application using **MongoDB**, **Express**, **React TypeScript**, enabling customers to collect, label, and analyze over **10,000** photos
- Spearheaded the development of data pipelines and robust **REST APIs** using **Node**, **Flask**, and **Google Cloud Pub/Sub** to implement data streaming between devices and server
- Automated the process of building, end to end testing, and deploying machine learning models using **Python**, **Docker**, and **Google Cloud AutoML Vision**, significantly decreasing modeling times

Projects

TTDO | **JavaScript • MongoDB • HTML/CSS** *Dec 2020 - Jan 2021*

- Built and deployed a task management system which allows users to input information and displays the obtained data on the calendar on **Heroku** with **MongoDB**, **Node** and **EJS/HTML**
- Integrated Google API and implemented **OAuth2.0** login/signup workflow with **Passport.js** and Google SSO to encrypt user information

ITrash | **Python • C++ • OpenCV • Raspberry Pi • Arduino** *Sept 2020 - Dec 2020*

- Collaborated with a team of four students to develop an autonomous trash can to catch projectile garbage, making it convenient for users to throw trash
- Developed object landing time estimation feature with an **80%** accuracy using **Python** and kinematics
- Obtained location data at different time frames through image analysis with the **Raspberry Pi** camera module, **Python**, and **OpenCV** for object detection and tracking